What is claimed is:

1. A method to assemble a uniform force hydrostatic bolster plate to one side of a substrate having a first side and a second side, comprising:

attaching a component to an electrical contact area on said second side of said substrate;

filling a bladder with a material;

inserting said bladder into a hollow plate; and

attaching said bladder and said hollow plate to said first side of said substrate, wherein said bladder and said hollow plate are attached to said first side opposite said electrical contact area on said second side of said substrate.

2. The method of claim 1, wherein said component is a land grid array (LGA) component.

3. The method of claim 1, wherein said substrate is selected from a group of substrates consisting of: a printed circuit board (PCB), a multi-chip module (MCM), and a flexible substrate.

4. The method of claim 1, wherein said hollow plate includes a material selected from a group of materials consisting of: a stainless steel alloy, a spring steel alloy, a titanium steel alloy, a magnesium alloy, an aluminum alloy, a composite, or a plastic.

5. The method of claim 1, wherein said bladder incorporates a substantially non-compressible liquid.

6. The method of claim 1, wherein said bladder is comprised of an impermeable elastomeric material selected from a group of materials consisting of: a plastic, a rubber, or a fabric.

7. The method of claim 1, wherein said material inside said bladder is selected from a group of materials consisting of: water, a glycol solution, an oil mixture, a water-based gel, or an oil-based gel.

8. A method to fabricate a uniform force hydrostatic bolster plate, comprising:

selecting a set of physical dimensions for a bladder and a hollow plate incorporated in said uniform force hydrostatic bolster plate;

modeling said uniform force hydrostatic bolster plate after assembly on a substrate;

estimating an improved set of physical dimensions for said bladder and said hollow plate after modeling said uniform force hydrostatic bolster plate after assembly of said uniform force bolster plate and a component on said substrate;

fabricating a bladder prototype and a hollow plate prototype according to said improved set of physical dimensions; and

putting said bladder prototype filled with a substantially non-compressible material into said hollow plate prototype, such that said bladder prototype extends in height above said hollow plate prototype.

9. The method of claim 8, wherein said uniform force hydrostatic bolster plate includes a material selected from a group of materials consisting of: a stainless steel alloy, a powder-coated spring steel alloy, a plated spring steel alloy, a painted spring steel alloy, a titanium steel alloy, a magnesium alloy, an aluminum alloy, a composite, or a plastic.

10. The method of claim 8, wherein said component is a land grid array (LGA) component.

11. The method of claim 8, wherein said bladder incorporates a substantially non-compressible liquid.

12. The method of claim 8, wherein said bladder is made from an impermeable elastomeric material chosen from the group of impermeable elastomeric materials consisting of: a plastic, a rubber, or a fabric.

13. The method of claim 8, wherein said material inside said bladder is selected from a group of materials consisting of: water, a glycol solution, an oil mixture, a water-based gel, or an oil-based gel.

14. An assembled substrate, comprising

a substrate having a first and a second side, and an electrical contact area on said first side;

an electrical component having a plurality of leads attached to said electrical contact area of said substrate; and

a uniform force hydrostatic bolster plate attached to said second side of said substrate opposite said electrical contact area of said substrate, wherein said uniform force hydrostatic bolster plate includes:

a bladder,

a material inside said bladder, and

a hollow plate to enclose said bladder, wherein said hollow plate is open on one side.

15. The assembled substrate of claim 14, wherein said substrate is chosen from a group of substrates consisting of: a printed circuit board (PCB), a multi-chip module (MCM), and a flexible substrate.

16. The assembled substrate of claim 14, wherein said component is a land grid array (LGA) component.

17. The assembled substrate of claim 14, wherein said uniform force hydrostatic bolster plate includes a hollow plate fabricated from a material selected from a group of materials consisting of: a stainless steel alloy, a powder-coated spring steel alloy, a plated spring steel alloy, a painted spring steel alloy, a titanium steel alloy, a magnesium alloy, an aluminum alloy, or a plastic.

18. The assembled substrate of claim 14, wherein said material of said bladder incorporates a substantially non-compressible liquid.

19. The assembled substrate of claim 14, wherein said bladder is made from an impermeable elastomeric material chosen from a group of impermeable elastomeric materials consisting of: a plastic, a rubber, or a fabric.

20. The assembled substrate of claim 14, wherein said material inside said bladder is selected from a group of materials consisting of: water, a glycol solution, an oil mixture, a water-based gel, or an oil-based gel.